

HANDBOOK



FOR

**INSPECTION, PACKAGING, HANDLING,
STORAGE AND TRANSPORTATION**

Handbook

for

Inspection, Packaging, Handling, Storage and Transportation

FOREWORD

This handbook provides uniform procedures for personnel engaged in the inspection, packaging, handling, storage, and transportation of selected equipment under material management cognizance of Naval Sea Systems Command (NAVSEA) and Naval Inventory Control Point (NAVICP) Mechanicsburg, including equipment stocked solely for foreign military sales. The procedures herein are intended as a working aid to personnel engaged in a warehouse function and as a supplement to existing standards and specifications.

This handbook does not attempt to replace the many preservation, packaging and packing specifications, both general and specific, that are needed to cover special conditions. Many situations require that specialists in packaging call on their experience to tailor unique packaging directions. This handbook outlines the minimum care necessary to maintain new equipments in their present condition and to minimize degradation of material turned in by users. This handbook does not pertain to nuclear reactor materials.

Comments and recommendations to improve the handbook are invited. Especially solicited are suggestions from users who are directly involved in the inspection, packaging, handling, storage and transportation of material. Address comments and recommendations to NAVSEA, Code SEA 04L4.

TABLE OF CONTENTS

Chapter	Title	Page
1	GENERAL INSTRUCTIONS	1
1.1	Purpose of Handbook.....	1
1.2	Background.....	1
1.3	Handbook Organization and Use.....	2
1.3.1	General.....	2
1.3.2	General Procedure.....	2
1.3.3	Individual Equipment Procedures.....	2
1.3.4	Appendices.....	3
2	GENERAL PROCEDURE	4
2.1	Inspection.....	4
2.1.1	New or Refurbished Equipment.....	4
2.1.2	RFI Equipment Turned In.....	4
2.1.3	Non-RFI Equipment Turned In.....	5
2.1.4	Undetermined Condition.....	5
2.1.5	Follow Up Actions.....	5
2.2	Packaging/Preparation for Delivery.....	5
2.2.1	Complete Preservation – Packaging and Packing.....	5
2.2.2	Repacking.....	6
2.2.3	Minimum Packaging for Shipment.....	6
2.2.3.1	Container.....	6
2.2.3.2	Packing Material.....	6
2.2.3.3	Bracing.....	6
2.2.3.4	Barrier Seal.....	6
2.2.3.5	Technical Manuals.....	7
2.2.3.6	Detached Material.....	7
2.2.4	Special Packaging Requirements for Electrostatic Discharge Sensitive Equipment.....	7
2.2.5	Special Packaging Requirements for Classified Material.....	7
2.2.6	Container Marking.....	7
2.3	Handling.....	8
2.3.1	Special Handling Equipment and Tools.....	8
2.3.2	Special Handling Procedures and Safety Precautions.....	9
2.4	Storage.....	9
2.4.1	Environment.....	9
2.4.2	Segregation.....	9

Chapter	Title	Page
2.4.3	Shelf Life.....	9
2.5	Transportation.....	10
2.5.1	Mode.....	10
2.5.2	Preparation.....	10
2.5.3	Loading.....	10
3	INDIVIDUAL EQUIPMENT IPHST PROCEDURES	16
	ELECTRIC/ELECTRONIC EQUIPMENT AND COMPONENTS	17
3.1	Antennas and Antenna Components.....	18
3.2	Batteries, Lead-Acid Storage.....	23
3.3	Cable, Cord and Wire Assemblies, Electric.....	28
3.4	Cable, Minesweeping.....	32
3.5	Computers and Allied Equipment.....	36
3.6	Consoles, Displays and Control Units.....	40
3.7	Electric Equipment, Non-Rotating.....	44
3.8	Electric Equipment, Rotating.....	48
3.9	Electronic Equipment and Components.....	53
3.10	Instruments, Test; Indicating Equipment; and Meters.....	58
3.11	Transducers, Sonar.....	63
	HULL AND MECHANICAL EQUIPMENT	67
3.12	Anchors, Marine.....	68
3.13	Bearings; Ball, Roller, Sleeve (Oil Impregnated, Metal, Non-Metal).....	72
3.14	Burners, Carbon Monoxide and Hydrogen.....	76
3.15	Carbon Dioxide Removal Plant, Liquid Absorbent Type.....	80
3.16	Chain, Anchor.....	84
3.17	Compressors, Air (Except Oxygen).....	87
3.18	Domes, Sonar; Rubber, Stainless Steel, Fiberglass.....	92
3.19	Distilling Units, Water.....	96
3.20	Emergency and Fire Fighting Equipment.....	100
3.21	Gas Generating and Handling Equipment.....	103
3.22	Laundry and Dry Cleaning Equipment.....	107
3.23	Pumps, General.....	111
3.24	Recompression Chamber.....	116
3.25	Refrigerating/Air Conditioning Units and Refrigerators.....	120

Chapter	Title	Page
3.26	Servo-Components; Precision Instrument, Rotating.....	125
3.27	Steering Gears; Electro-Hydraulic, Marine.....	129
3.28	Tubes, Periscope.....	134
3.29	Valves.....	138
3.30	Winches, Heavy Electro-Hydraulic and Electro-Mechanical Equipment.....	142
	PROPULSION, POWER, AND LINE SHAFT EQUIPMENT	147
3.31	Boilers, Steam and Related Equipment.....	148
3.32	Engines, Diesel.....	153
3.33	Engines, Gas Turbine.....	157
3.34	Gears and Gear Assemblies.....	162
3.35	Propellers.....	167
3.36	Shafts, Ship Propulsion.....	173
3.37	Turbines, Steam.....	179
	NAVIGATION AND SPECIAL EQUIPMENT	183
3.38	Gyrocompasses.....	184
3.39	Rodmeters.....	188
3.40	Ship Inertial Navigation System (SINS) and Compass Equipment.....	192
	MISCELLANEOUS	198
3.41	Small Boats (Less Than 50').....	199

LIST OF FIGURES

Number	Title	Page
1	Visual Inspection Checklist.....	11
2	Typical MIL-TD-129 Marking.....	14

LIST OF TABLES

Number	Title	Page
1	Definition of Methods and Submethods of Preservation-Packaging.....	15

APPENDICES

Appendix	Title	Page
A	IPHST Handbook Terms.....	205
B	Cross-Index of Equipments.....,,,	210
C	Automatic Data Processing (ADP) and Software Resources.....	223
D	References (Specifications, Standards, Military Handbooks and Other Government Documents and Publications).....	224
E	Technical Points of Contact.....	230